

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed March 30, 2006. At the time of the Office Action, Claims 24, 25, 27, 28 and 36-54 were pending in this Application. Claims 24, 25, 27, 28 and 36-54 were rejected. Claims 24, 42, 51 and 54 have been amended to further define various features of Applicants' invention. Claim 26 was previously cancelled without prejudice or disclaimer and Claims 1-23 and 29-35 were previously cancelled due to an election/restriction requirement. Claims 39 and 48 are also cancelled in this Amendment. Applicants respectfully request reconsideration and favorable action in this case.

**Rejections under 35 U.S.C. § 112**

Claims 24, 25, 27, 28 and 36-54 were rejected by the Examiner under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Applicants amend Claims 24, 42, 51 and 54 to overcome these rejections. Specifically, Applicants have amended the claims to replace the phrase "is not radiation/graft polymerized" with "is not further modified by radiation/graft polymerization after oxygen plasma treatment" and respectfully request full allowance of Claims 24, 42, 51 and 54 as amended.

**Rejections under 35 U.S.C. §103**

Claims 24, 25, 27, 28 and 36-54 were rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,707,520 issued to Hitoshi Kuroki et al. ("Kuroki") in view of U.S. Patent No. 5,498,336 issued to Naoki Katsurada et al. ("Katsurada"). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

Claims 24, 25, 27, 28 and 36-54 were rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,820,755 issued to Menachem Kraus et al. ("Kraus") in view of "*Adsorption of blood proteins on glow-discharge-modified polyurethane membranes*" from Journal of Appl. Polym. Sci., by Nesrin Kayirhan, et al. ("Kayirhan"). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

In order to establish a prima facie case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580

(C.C.P.A. 1974). Furthermore, according to § 2143 of the Manual of Patent Examining Procedure, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Applicants have amended the independent claims to require a mean pore diameter of between 5 and 15  $\mu\text{m}$ . This pore diameter allows platelets to pass while retaining leukocytes. *See specification, paragraph 43*. Neither Kuroki nor Kayirhan teach or suggest this feature either alone or in combination. Specifically, Kuroki describes pores having a diameter ranging between 1 and 3  $\mu\text{m}$  with an average diameter of 2  $\mu\text{m}$ . *See Kuroki, Col. 11, lines 15-25*. Kayirhan provides no description of pore diameter at all.

Katsurada and Kraus do not teach oxygen gas plasma treatment. Kraus teaches no gas plasma treatment whatsoever. Katsurada teaches only argon plasma treatment. *See Example 4, Col. 7, line 61*. This causes the filter to retain platelets. *See Col. 8, line 7 and Col. 11, line 27*. The filters of Katsurada have an additional polymer grafted to their surfaces after treatment to prevent platelet retention. *See Examples 4-7 and Col. 7, line 61*. The need for this additional treatment in Katsurada as opposed to in the current invention results from an underlying structural difference caused by argon plasma treatment as opposed to oxygen plasma treatment. Further, the added polymers in Katsurada are not present in the presently claimed invention.

Accordingly, the only combinations that might arguably disclose all characteristics of the current independent claims are Katsurada (to disclose pore size) with Kayirhan (to disclose gas plasma treatment) and Kraus (to disclose pore size) with Kayirhan.

#### Katsurada and Kayirhan

Kayirhan describes a method of making polyurethane layers more hydrophilic. This is accomplished using gas plasma treatment and facilitates passing proteins through the filter. In particular, Kayirhan shows that an oxygen plasma-treated layer of polyurethane filters less

proteins than an argon plasma-treated layer of polyurethane. Additionally, Kayirhan shows that the oxygen plasma-treated polyurethane layers are more hydrophilic because they have oxidation groups on their surfaces. *See page 1328, right column, lines 1-3.* Consequently, Kayirhan shows that an oxygen plasma treated layer allows proteins to pass. *See page 1328, left column.* To Applicants' knowledge, adsorption of platelets to a polyurethane filter surface is normally preceeded by adsorption of proteins to surface. Accordingly, one skilled in the art would expect the filter of Kayirhan to allow platelets to pass.

Katsurada, in contrast describes a filter intended to filter leukocytes and the platelets. *See Col. 9, line 45 and Col. 11 and 27.* Accordingly, Applicants assert that there is no motivation to combine a filter designed to remove platelets such as Katsurada with a filter designed to allow even proteins to pass, such as Kayirhan.

Kraus and Kayirhan

Kraus describes a method for filtering leukocytes using a nitrocellulose layer having pores ranging from 5 to 15  $\mu\text{m}$ , although Kraus does not indicate this pore size is in any way related to allowing platelet to pass while retaining leukocytes. In fact, Kraus does not teach a filter designed to filter leukocytes while allowing platelets to pass. The only discussion of platelets at all in Kraus is at Example 13, which shows the amount of platelets in a sample passed through the filter was reduced from  $1.1 \times 10^6$  platelets/ $\mu\text{L}$  to between  $0.34 \times 10^6$  and  $1.04 \times 10^6$  platelets/ $\mu\text{L}$ . *Col. 5, lines 5-15.*

There is no motivation to combine the filter of Kraus, which was designed solely for leukoreduction, with that of Kayirhan, which was designed to allow even proteins to pass through it.

Further, Kayirhan teaches a treated polyurethane filter while Kraus focuses on a nitrocellulose filter. The oxygen plasma treatment of Kayirhan would have a different effect on nitrocellulose, providing a further reason why one skilled in the art would not combine these two references.

### CONCLUSION

Applicants have now made an earnest effort to place this case in condition for allowance in light of the amendments and remarks set forth above. Applicants respectfully request reconsideration of the pending Claims.

Applicants enclosed a Petition for a One Month Extension of Time. The Commissioner is hereby authorized to charge \$120 to Deposit Account No. 02-0383 of Baker Botts L.L.P. Applicants believe there are no additional fees due at this time, however, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 02-0383 of Baker Botts L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.322.2580.

Respectfully submitted,  
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Date: July 31, 2006

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